

**PERITYLE (ASTERACEAE, HELENIEAE), NEW SPECIES (FROM MEXICO),
NEW COMBINATION, AND NOTES**

A. Michael Powell & Sharon C. Yarborough

Department of Biology, Sul Ross State University, Alpine, Texas 79832 U.S.A.

ABSTRACT

Perityle pseudociliata, a new species from northwestern Chihuahua, México, is described. Superficially, *P. pseudociliata* resembles *P. ciliata* of central Arizona. A new combination, *P. gilensis* var. *longilobus*, is made for *Laphamia gilensis* subsp. *longilobus* W.E. Niles. Recent collections have provided new morphological and cytological information for *P. ambrosiifolia* and a range extension for *P. huecoensis*.

KEY WORDS: Asteraceae, Helenieae, *Perityle*, México, Arizona, Texas, systematics

Preparation of a treatment of *Perityle* for the Flora of North America and a review of United States species that extend into México has revealed the existence of an undescribed species in northwest Chihuahua. Description of the new taxon, the need for a formal nomenclatural change, and miscellaneous notes have inspired the present collage of information about *Perityle*.

Perityle pseudociliata A.M. Powell & S.C. Yarborough, spec. nov. Figure 1.
TYPE: MEXICO. Chihuahua: 26 km by winding road NW of Colonia Juárez in the "Tinaja", a canyon through the foothills of the Sierra Madre Occidental, 30° 22' N, 108° 12' W, 1750 m, oak scrub in the canyon bottom, "locally steep wall of the canyon through extrusive igneous rocks, this plant in a crevice with hardly any soil, no close associates, growing alone in crevice, rare, shrublet, 1-2 dm, perennial," 28 Jul 1972, W.E. Wilson, L.A. & M. C. Johnston 8480 (HOLOTYPE: TEX!).

Plantae suffruticosae, 1-2 dm altae villosae. Laminae foliorum 5-10 mm longae, 5-10 mm latae, deltatae, marginibus laceratis-lobatis. Capitula plerumque solitaria in axibus foliorum, radiata, ca. 5 mm alta, phyllariis 10-12. Flores radiati 6-8, ligulis albis, ca. 3 mm longis, ca. 2 mm latis. Flores

discorum 32-40, corollis luteis, 2.2-2.8 mm longis. Pappus ex 2 setis tenuibus, 0.5-1.5 mm longis, coronaque vestigiali ex squamellis compositus. Achenia atra, anguste oblanceolata, 2.0-2.7 mm longa, marginibus tenuiter callosis, marginibus et paginis cum pilis brevibus et adpressis.

Plants suffruticose, 1-2 dm high, moderately to densely villous, glandular-punctatae. Stems moderately to densely leafy. Leaves opposite or alternate; petioles 5-10 mm long; leaf blades 50-10 mm wide, narrowly to broadly deltoid, margins lacerate-lobed. Heads typically solitary in leaf axils; peduncles 5-10 mm long. Heads radiate, ca. 5 mm high and wide, involucre campanulate, phyllaries 10-12, linear-lanceolate to lanceolate, 3-4 mm long, 0.7-1.0 mm wide, densely villous. Ray flowers 6-8, pistillate and fertile, ligules white, narrowly to broadly obovate, ca. 3 mm long, 2 mm wide. Disc flowers 32-40, corollas yellow, glandular 2.2-2.8 mm long, tubes generally shorter than the cylindrical to narrowly funnelliform throats, lobes 0.1-0.2 mm long. Pappus typically of 2 delicate, unequal, finely barbellate bristles, 0.5-1.5 mm long, plus a minute crown of vestigial, lacinate, hyaline squamellae or callous tissue. Achenes black, narrowly oblanceolate, 2.0-2.7 mm long, margins thinly calloused, and margin surfaces with short, dense, appressed hairs. Chromosome number unknown.

Perityle pseudociliata is known from a single collection 26 km northwest of Colonia Juárez in northwest Chihuahua, México. The new taxon is similar in leaf and capitulum morphology to *P. ciliata* of central Arizona. Both *P. pseudociliata* and *P. ciliata* have basically deltoid lacerate-lobed leaf blades and heads with white ligules and yellow disc corollas. The two taxa might be considered as merely disjunct populations of *P. ciliata* except that the achene and pappus morphology of *P. pseudociliata* is most like that of *Perityle* sect. *Laphamia* (Powell 1973), while the achene and pappus morphology of *P. ciliata* is characteristic of *Perityle* sect. *Perityle* (Powell 1974). In sect. *Laphamia* the achene margins are usually sparsely short-pubescent and the pappus may be absent, consist of one or two (or more) bristles only, or consist of a crown of inconspicuous vestigial squamellae with or without bristles. In sect. *Perityle* the achene margins typically are profusely ciliate and the pappus consists of one or two (or more) bristles and a crown of squamellae. Previously, heads with white ligules in the genus *Perityle*, were known only in certain species of sect. *Perityle*.

Another white rayed species of *Perityle* with laphamioid achenes has been collected near Colonia Juárez, i.e., *Laphamia scopulorum* M.E. Jones, Colonia Juárez, 6000 ft., upper edge of lower Temperate Life Zone, 12 Sep 1903, M.E. Jones s.n. This taxon was tentatively placed as a synonym of *P. coronopifolia* by Powell (1974), and more recently has been recognized by Turner (*Comps of Mexico*, 1998, in prep.) as a distinct species, *P. scopulorum*. *Perityle scopulorum* is known only from a single collection near Colonia Juárez, México, at a site which can be assumed to be within approximately 26 km of the only known locality for *P. pseudociliata*. *Perityle scopulorum* is similar in leaf and capitulum morphology to *P. coronopifolia* of southeastern Arizona and southwestern New Mexico. One collection tentatively identified as *P. coronopifolia* has been reported from Chihuahua, México. The leaves of *P. scopulorum* and *P. coronopifolia* are highly dissected and both have white radiate heads. The two taxa might be considered as merely disjunct populations or varieties of the same taxon except that the achene and pappus morphology of *P. scopulorum* is like that of sect. *Laphamia* (and the ultimate leaf segments are more

slender, linear-filiform), and the achene and pappus morphology of *P. coronopifolia* is characteristic of sect. *Perityle*.

The Chihuahuan taxa with laphamioid achenes and white-rayed heads, *Perityle pseudociliata* and *P. scopulorum*, appear to be closely related species with distinctive leaf morphologies. These two species also differ somewhat in their achene characters: slightly longer and narrowly oblanceolate with rounded shoulders in *P. pseudociliata*; slightly shorter and linear-oblong with truncate shoulders in *P. scopulorum*. The latter also appears to have more evident hyaline pappus scales than does *P. pseudociliata*. The leaf characters of *P. pseudociliata* and *P. scopulorum* are as distinctive as is the leaf morphology, between the relatively widespread, but geographically isolated and closely related *P. ciliata* and *P. coronopifolia* of Arizona and New Mexico. Reduced achene and pappus forms are known in certain species of *Perityle* sect. *Perityle* (Powell 1974), i.e., achene margins with shorter hairs and pappus squamellae reduced in size so that the fruits resemble those of sect. *Laphamia*. One species, *P. lloydii* Robinson & Fern., is characterized by reduced achenes and pappus. *Perityle pseudociliata* and *P. scopulorum* may be interpreted as geographically isolated achene forms of *P. ciliata* and *P. coronopifolia*, respectively, or the two geographically proximal Chihuahuan entities might be viewed as ancestral laphamioid taxa. In either case, we believe that the description of *P. pseudociliata* is the taxonomic equivalent of recognizing *P. scopulorum* as a distinct species.

Finally, it should be noted that a collection (Mayfield *et al.* 180 [TEX]) tentatively recognized as *Perityle coronopifolia* from Chihuahua (Turner 1998, Comps of Mexico, in prep.), actually differs from *P. coronopifolia* in the United States in a number of characters (longer petioles and peduncles, capitulescences of only 1-2 heads, longer achenes that are somewhat perityloid with cilia on the margins but no crown of hyaline scales), but clearly closely resembles *P. coronopifolia* in other features including leaf shape and capitulum morphology; unfortunately, the Mayfield collection lacks mature achenes. Its geographic position lies farther south by ca. 80 km than known collections of *P. scopulorum* and *P. pseudociliata*. Much additional collection on bluffs and along escarpments in north central México is needed to resolve some of the problems posed here, especially since geographic speciation predominates in *Perityle* (Powell 1973).

Perityle gilensis (M.E. Jones) Macbride var. *longilobus* (W.E. Niles) A.M. Powell & S.C. Yarborough, *comb. nov.* BASIONYM: *Laphamia gilensis* M.E. Jones subsp. *longilobus* W.E. Niles, Mem. N.Y. Bot. Garden 21:51-54. 1970. TYPE: UNITED STATES. Arizona: Gila Co., Lowermost, north-facing cliffs of Salt River Canyon, near crossing of U.S. highway 60, ca. 915 m, 13 Oct 1964, W.E. Niles 453 (HOLOTYPE: ARIZ).

Perityle gilensis (M.E. Jones) Macbride var. *salensis* A.M. Powell, Sida 5:104-106. 1973. TYPE: UNITED STATES. Arizona: Gila Co., Salt River Canyon between Globe and Show Low, 18 Aug 1969, S. Sikes 428 (HOLOTYPE: SRSC; Isotypes: SMU,TEX).

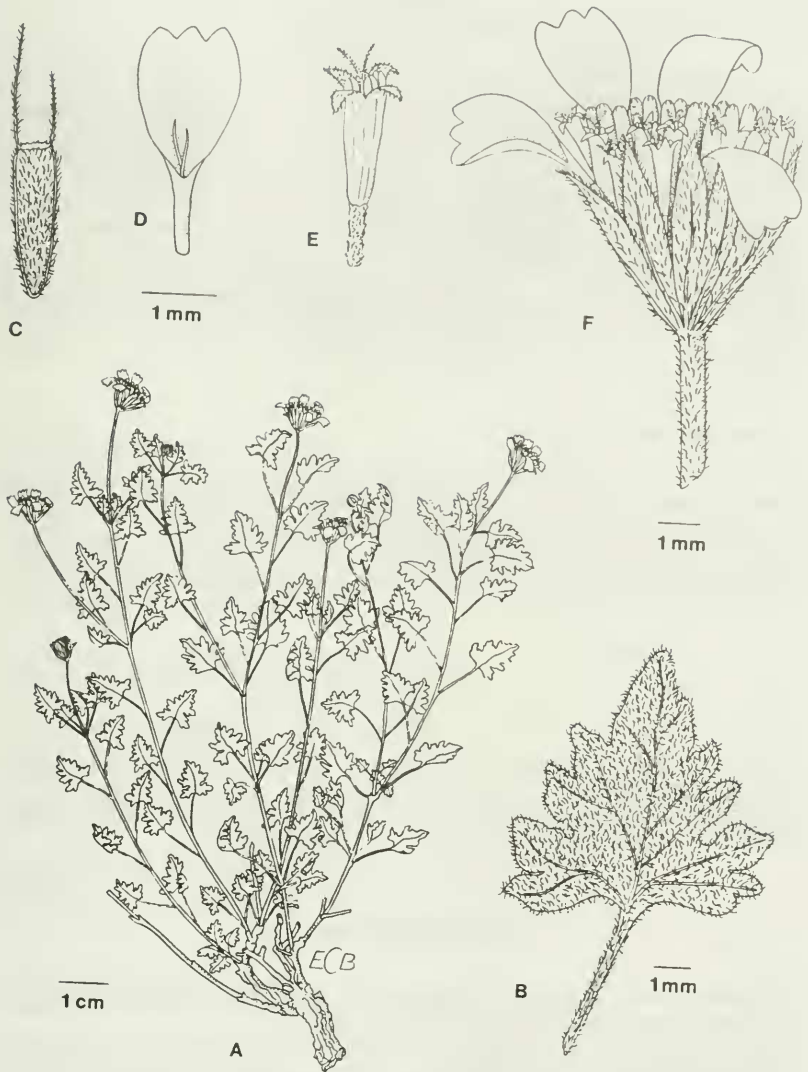


Figure 1. *Perityle pseudociliata*, (A) habit, (B) leaf, (C) achene with pappus, (D) ray corolla, (E) disc corolla, (F) head. From W.E. Wilson, L.A. & M.C. Johnston 8480.

Perityle ambrosiifolia A.M. Powell & S.C. Yarborough

Eleven new collections of this recently described taxon (Powell & Yarborough 1994) have been examined, several of them for chromosome number (Arizona, Greenlee Co., Stargo, along Eagle Creek, upper Gila River drainage, W of Clifton and Morenci, near Graham-Greenlee Co. line, 25 Aug 1997, L.A. McGill 6948-6958 [SRSC). In specimens of *Perityle ambrosiifolia* previously examined (Powell & Yarborough 1994), most had achenes with one pappus bristle, while achenes without a pappus bristle were rarely observed. In the McGill collections, about one-half of the plants had achenes without pappus bristles. Also, ray florets were not present in any of the McGill collections. Ray florets, apparently with reduced ligules, are present in occasional populations of *P. ambrosiifolia*. The color of the ray florets, often an important character in *Perityle*, still is unknown (Powell & Yarborough 1994). The chromosome number of *P. ambrosiifolia* tentatively was determined as $2n = 34$ (McGill 6948, $n = ca. 17$; McGill 6950, $n = ca. 17$).

Perityle huecoensis A. M. Powell

This species, previously known only from the Hueco Mountains in El Paso County, Texas, has been collected in adjacent México: Chihuahua, Mpio. Juárez, Sierra Juárez; extreme N end of Sierra Juárez, N-facing cliffs, 17 Apr 1992, Spellenberg & Bacon 10994 (NMC,MEXU); middle of range, E side, NE-facing limestone cliff, 1450 m, 29 May 1993, Spellenberg, Brouillet, & Kearns 11812 (NMC,MEXU,DC,SRSC,TEX).

ACKNOWLEDGMENTS

We are grateful to Lyle A. McGill for collecting and sending flower bud material and voucher specimens of *Perityle ambrosiifolia*, Gayle Turner for providing the Latin description, and Professor B.L. Turner and Michael J. Warnock who reviewed the manuscript. The illustration was prepared by Ellen Carey Bergen.

LITERATURE CITED

- Niles, W.E. 1970. Taxonomic investigations in the genera *Perityle* and *Laphamia* (Compositae). Mem. N. Y. Bot. Gard. 21:1-82.
Powell, A.M. 1973. Taxonomy of *Perityle* section *Laphamia* (Compositae-Helenieae-Peritylinae). Sida 5:61-128.
Powell, A.M. 1974. Taxonomy of *Perityle* section *Perityle* (Compositae-Peritylinae). Rhodora 76: 229-306.
Powell, A.M. & S.C. Yarborough. 1994. A new species of *Perityle* (Asteraceae, Helenieae) from Arizona. Phytologia 76:324-328.
Turner, B.L. 1998. The Comps of Mexico, Helenieae. Vol. 6 (in prep.).